

Proposed View 08



From Town Hall Square

Existing View 09



From Caversham Bridge

Proposed View 09



From Caversham Bridge

Existing View 10



From Kenavon Drive Taken near the entry road to McDonalds.

Proposed View 10



From Kenavon Drive Taken near the entry road to McDonalds.

Existing View 11



From Balmore Walk

Proposed View 11



From Balmore Walk

Existing View 12



From Dunsden Green Taken in a field beside the road to Playhatch, just south of the Green where there is a gap in the roadside hedge.

Proposed View 12



From Dunsden Green Taken in a field beside the road to Playhatch, just south of the Green where there is a gap in the roadside hedge.

Existing View 13



From junction of Friar Street and West Street Taken from outside the Thai Corner restaurant

Proposed View 13



From junction of Friar Street and West Street Taken from outside the Thai Corner restaurant. Telecom House proposed redevelopment not depicted because the exact design is uncertain.

Method Statement

Our method of working is to match a view of a computer generated model of the proposed building to a photographic view.

We have used the CAD program Vectorworks to create a computer scale model of the most prominent buildings in central Reading.

To align a computer generated view with a photograph the minimum camera information required is the position (in three dimensions) and the direction of aim (also in three dimensions).

We get the camera's plan position by measuring on site the distance of the tripod to features shown on OS Master Map and we can read off the camera height above sea level in Google Earth '3D Buildings' Layer. This gives us the camera's 3D position in Ordnance Survey Eastings and Northings and Ordnance Survey height above datum.

We assume the camera's direction of aim is toward the feature at the exact centre of the photograph. This is valid for a camera lens that doesn't have a movement feature such as a 'rising front'. Again we measure this feature on an OS Masterplan to get the plan position of the camera's aim point. By levelling the camera on the tripod we can assume the height of the aim point is the same as the camera's.

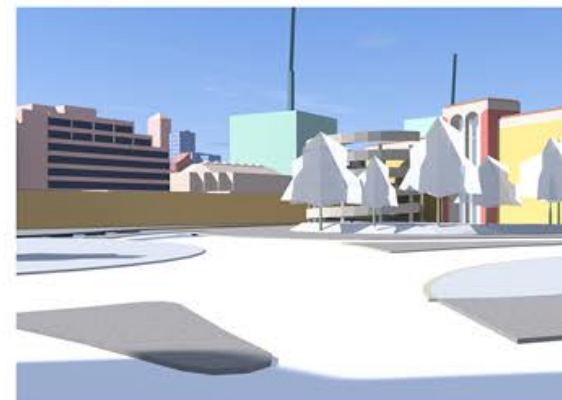
These values of camera position and aim are replicated in the computer model. We generate the image in the 3D imaging program Artlantis. This image is aligned to fit over the photo in Photoshop. There are a few causes of inaccuracy to overcome in this process. Firstly the camera won't be exactly vertical or horizontal. Any roll of the camera to left or right is corrected by rotating the photo in Photoshop. Any tilt of the camera up or down is replicated by adjusting the aim position for the computer model image. Any difference in the field of view of the images is corrected by scaling in Photoshop. Inaccuracies in the target position are corrected by sliding the images in Photoshop until they align. Lastly any distortion caused by the lens has to be taken into account when aligning the images. The distortion occurs towards the edges of the photo, so this region of the photo has to be disregarded when aligning the computer image over it.

We also have a computer model of the proposed development and some other prominent developments in Reading which have received planning permission but have not yet been built. Having aligned our model of Reading with the camera we can use the identical settings to produce a matching image of the proposed developments. We have traced this off in Photoshop to create the final images.

We used a Sony A350 DSLR camera with a Sony 18-70mm lens and a Sigma 10-20mm lens. Software used was Vectorworks 2013, Artlantis Render 4.1 and Photoshop CC.



1. Photo



2a. CAD Model of central Reading



2b. CAD Model of central Reading superimposed on photo



3a. CAD Model of proposed developments



3b. CAD Model of proposed developments superimposed on photo



4. 'Wireframe' image

Table of Existing Tall Buildings and Structures in Reading

Heights used in our 3D model of Reading

	BUILDING OR STRUCTURE	ELEMENT	HEIGHT(m)	GRD LVL(m)	AOD(m)	SOURCE
1	Green Park Wind Turbine	Top of blade	118	40	158	Estimated from hub ht of 85m and rotor diam of 70m from ecotricity.co.uk
2	The Blade	Top of spire	86.68	41.22	127.9	Planning application 092090
3	Chatham Place Phase 2 Tower	Parapet	58.98	44.6	103.58	Planning application 120293
4	Fountain House	Top of lift tower	50.25	44.4	94.25	emporis.com
5	Christ Church, Christchurch Road	Top of spire	50	68.2	118.2	English Heritage listing description
6	Hemdean Transmitter, Morlais	Top	47	68	115	Google Earth 3D Buildings
7	Royal Berkshire Hospital Chimney	Top	47	50	97	Google Earth 3D Buildings
8	Polish Catholic Church, Watlington St	Top of spire	45.7	40.5	86.2	http://www.berkschurchestrust.org.uk
9	Thames Tower	Original parapet	45.27	44	89.27	Surveyed point
10	Gasometer, Kennet Walk	Top	45	37	82	Google Earth 3D Buildings
11	One Reading Central	Parapet	44	40	84	Planning application 70930
12	St Giles Church, Southampton St	Top of spire	43.5	41.3	84.8	Planning application 141396
13	193 Wensley Road	Lift motor room roof	43	48.75	91.75	emporis.com
14	203 Wensley Road	Lift motor room roof	43	48.75	91.75	emporis.com
15	205 Wensley Road	Lift motor room roof	43	48.75	91.75	emporis.com
16	Novotel	Plant Room roof	41.3	45.4	86.7	Planning application 120279
17	North Gate House, 21-23 Valpy St	Top of pyramidal roof	39.82	39.71	79.53	Surveyed point
18	Tilehurst Water Tower	Central tower	39.8	103.2	143	Google Earth 3D Buildings
19	Wesley Methodist Church	Top of spire	39.9	39.1	79	Google Earth 3D Buildings
20	Oracle car park	Top of Beacon sculpture	39	42	81	Google Earth 3D Buildings
21	Electricity Pylon, east of Rose Kiln Lane	Top	39	38	76	Google Earth 3D Buildings
22	Terminal electricity Pylon, east of Rose Kiln Lane	Top	38	39	77	Google Earth 3D Buildings
23	Cycle and Pedestrian Bridge	Top of mast	38.3	37.25	75.58	Planning application 131234
24	Communications Mast, Fire Station, Dee Road	Top of mast	37	59	96	Google Earth 3D Buildings
25	Apex Court	Top of pyramidal roof	36.04	37.5	73.54	Surveyed point
26	Abbey Gardens	Top of mansard	35.5	38	73.5	Planning application 121582
27	Reading Bridge House	Parapet of end tower	35.48	38	73.48	Surveyed point
28	Reading Crown Court Extension	Top of pyramidal roof	35.2	41.8	77	Google Earth 3D Buildings
29	Chatham Place, Phase 1	Roof level	35	44	79	Google Earth 3D Buildings
30	Electricity Pylon, west of Rose Kiln Lane	Top	34	38	72	Google Earth 3D Buildings
31	AMS Tower, University of Reading	Plant Room roof	34	64	98	Google Earth 3D Buildings
32	Penta Hotel, Oxford Road	Mansard plant top	33	39	72	Google Earth 3D Buildings
33	John Lewis, Broad Street	Mansard plant top	32	42	74	Planning application drawing
34	Reading Telephone Exchange, Basingstoke Rd	Top of rooftop mast	32	63	95	Google Earth 3D Buildings
35	59-103 Luscinia Drive	Top of upper roof	31.5	37.4	68.9	Surveyed point
36	Phoenix House, Station Approach	Roof-top vent	31.5	39.6	71.1	Planning application drawing
37	St Lawrence House, Abbey Square	Top of roof eaves	31	41	72	Google Earth 3D Buildings

Table of Sources of information

Used for our 3D model of Reading

SOURCE OF INFORMATION	ESTIMATED ACCURACY
Surveyed points	0.2m
Architects' figured dimensions	0.2m
Architects' drawings	0.5m
OS Master Map	0.5m
Google Earth 3D Buildings	1.5m
Photogrammetric DSM points	2m
OS Open Map – Local	3m
Mobile phone GPS	5m
Google Maps Street View	variable
Bing Maps Bird's Eye View	variable